

DOCUMENT RESUME

ED 218 338

TM 820 379

AUTHOR Matthews, Peter R.
TITLE A Valid and Reliable Assessment of Recreation.
PUB DATE [81]
NOTE 20p.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Data Collection; *Models; Participant Satisfaction;
Participation; Recreation; *Recreational Activities;
*Reliability; *Research Methodology; *Validity

ABSTRACT

The development of a valid and reliable method of assessing recreational patterns was the purpose of this study. Recreational activities were classified using activity clusters and the setting for the activity. This information yielded a two-dimensional matrix for viewing activities. The first dimension of the matrix was the recreational activity clusters: physical, social, cognitive, and environment-related recreation. The second dimension represented the activities' structural components: with whom (self or family, friends, or others) and where (home, neighborhood, or community) the activity takes place. Reliability of information can be assured if appropriate data collection methods are used. When high interrater agreement on the classification of activities is generated, reliability is increased. Methods of data collection are participant self reports on amount of participation, frequency of participation, and interrater agreement. Methods of selecting recreational activities from many recreational domains include purpose and location of the activity, or the age, sex, and socioeconomic status of participants. (DWH)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED218338

TM 820 375

A Valid and Reliable Assessment of Recreation

Dr. Peter R. Matthews
Associate Professor of Special Education

Lock Haven State College
Lock Haven, Pa. 17745

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- * This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Weak instrumentation has characterized studies investigating recreational patterns. Activities used have been incorrectly selected and have not sampled all of the recreation domains. Once activities have been selected, they have been improperly classified. Generally accepted methods of data collection have usually not been utilized. The purpose of this paper is to present a valid and reliable assessment of recreation.

Validity

The major validity issue is content validity. Given the whole domain of recreational activities, what constitutes an accurate and manageable representation of activities? To answer this question it is necessary to specify the major parameters of recreation. Recreational activities can be best classified using activity clusters and the setting for the activity. The setting includes with whom and where activities took place. This will yield a two dimensional matrix for viewing recreational activities to assure appropriate sampling. Care must also be taken in selecting activities for this matrix. This involves the uniqueness of the study and includes the purpose of the study, the geographical location of the study and the age, sex and socioeconomic status (SES) of those people being studied. It also must include the formality, cost, accessibility and locality of activities.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

P. R. Matthews

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Classification

Once activities have been selected they are usually classified. Neulinger (1974) asserted that there was no best way to arrange recreation activities into groups for the purpose of gathering data on recreation patterns. A report by the Athletic Institute (The Recreation Program, 1963) noted that any activity classification system lacked completeness due to the overlap of activities and their scope. Therefore, investigators must devise their own lists of activities and classify them in a way that satisfies the purpose of the study (Ditton, 1975). Three ways that classification has been treated are activity categories, activity descriptors, and activity clusters.

Activity Categories. Some investigators of recreation patterns have arranged selected recreational activities into categories. A summary of common activity categories used appears in Table 1. Twenty-two categories suggested by 12 sources are contained in this table.

Activity Descriptors. A second way investigators have classified recreational activities has been as activity descriptors. Rainbow (1971) used the following criteria to classify activities: active or inactive, masculine or feminine, large group or individual, formal rules or no rules, strategy or no strategy, competitive or noncompetitive, much interpersonal interest or no interpersonal interest, high use of imagination and creativity or little imagination and creativity needed, high skill level or low skill level, high mental maturity or low mental maturity, high social maturity or low social maturity, much self-expression or little self-expression, belonging and/or joining involved or belonging

Table 1
Common Activity Categories by Sources

	A Guide to Programs... 1	Avedon & Arje (1964)	Berryman (1975b)	Brace (1966)	Burdge (1966)	CEC & AAPFER (1966)	Chapman (1975)	Dauer (1971)	Kraus (1966)	Lundberg... 2	McKechnie (1974)	Staley (1969)
arts & crafts		x	x			x	x		x		x	
musical activities		x	x	x		x	x		x			
rhythmic activities & dance		x	x	x		x	x	x	x			
dramatics		x	x			x			x			
TV, radio & phonograph						x	x			x		
quiet games			x			x						
social activities			x			x	x		x			
literary (intellectual)			x							x	x	
clubs		x				x	x					
hobbies & collections		x			x	x	x					
special events	x					x			x			
spectator events					x	x				x		
excursions						x				x		
aquatics		x	x	x		x		x				
basic movements	x			x		x		x				
physical fitness	x			x		x		x				
stunts				x		x		x				
tumbling & apparatus				x		x		x				
relays			x	x		x						
games & sports	x	x	x	x	x	x	x	x	x	x	x	x
outdoor recreation & ed.		x	x	x	x	x	x		x			
other activities		x			x							x

¹A Guide to Programs in Recreation and Physical Education for the Mentally Retarded (1968)

²Lundberg, Komarovsky, and McInerney (1969)

and/or joining not involved, work or play, physical coordination and muscle control required or physical coordination and muscle control not required. Rainbow (1971) reported an activity classification system developed by Vinter: degree of rules, controls, physical movement, skill required, interactiveness, and rewards.

Van der Smitten (1972) listed 34 standards plus general evaluation standards for studying community public parks and recreation activities. One standard seemed appropriate for the investigation of recreational activities. Another standard suggested the following examples for evaluating participation: individual, small group, and large group experiences; vigorous, intellectual, and spectator involvement; and numerous ranges of interrelationship, personal involvement and responsibility of the participant (e.g. leagues, discussions, workshops). Four types of activity categories were used by Bollman, Moxley and Elliot (1975) to assess the use of leisure: activities at home, activities with relatives, activities with friends and neighbors, and participation in voluntary organizations.

Activity Clusters. A third way investigators have classified recreational activities has been by socially determined clusters based on activity analysis and conceptualization. In this way, it was possible to study the components of recreational opportunities available in a particular area.

The . . . 'components concept' of recreation planning uses the principle of 'reasonable availability of opportunity.' This means that, within each demographic unit of a study area or community, each recreational experience opportunity is a component of the total standard for that unit. Since not all opportunities under the total system are controlled by one agency, these may be located in various places within the physical boundaries of the study unit. (Christiansen, 1974, p. 12).

Staley's (1969) activity cluster domains were psycho-motor, cognitive, and affective. The psycho-motor domain involved developmental movement such as eating, sleeping, sitting, walking, exercising, throwing, swimming, and organized sports. The cognitive domain involved intellectual development such as reading, attending plays, asking questions, following instructions, and refereeing. The affective domain involved interests, attitudes, and adaptive behavior required to take part in an activity or to perform in front of others willingly.

Avedon (1974) recognized eight processes in a developmental hierarchy to describe recreational patterns. They were intra-individual, extra-individual, aggregate, inter-individual, unilateral, multilateral, intra-group, and inter-group activities. Intra-individual activities (e.g. day dreaming) took place within a person's mind. Extra-individual activities (e.g. reading and walking) were directed toward an object. Aggregate activities (e.g. motion picture viewing and bingo) were directed toward an object in the presence of others. Inter-individual activities (e.g. chess) were competition on a one-to-one basis. Unilateral activities (e.g. tag) were group competition with one person as an antagonist. Multilateral activities (e.g. a poker game) were group competition with no one person as an antagonist. Intra-group activities (e.g. play in a band) were cooperative, goal-oriented, group actions. Inter-group activities (e.g. team games) were competition between intra-groups.

Van der Smitten (1970) combined activity clusters and functional units for studying the planning process of recreation. The five activity clusters used were: physical recreation, social recreation, cultural recreation, educational recreation, and aesthetic-creative

recreation. Functional units were defined as "combinations of compatible activity facilities" that formed "the use zones or use patterns of parks" (van der Smissen, 1970, p. 139), which had three major headings: areas and facilities, population units, and commercial or private recreation establishments. Areas and facilities included the subheadings of turf, multi-purpose court games, indoor assembly, natural areas, high density, general, outdoor ice skating, tennis, golf, outdoor pool, year-round pool, indoor physical area, playfields, and playground. Population units viewed boroughs and cities in five different ways: sub-neighborhood, neighborhood, inter-neighborhood, city-wide or metropolitan, and regional-county. Commercial or private recreation establishments were grouped into 18 categories: movie theatres, bowling lanes, private golf courses, driving ranges, pitch and putt or par three, horseback riding stable, roller rinks, dance halls and discotheques, billiard parlors, athletic classes, country clubs, private tennis clubs, private swim clubs, amusement parks, other private clubs or miscellaneous, drinking establishments, sports oriented, and amusements.

Christiansen (1974) reduced the six clusters advocated by the 1969 Recreation Standards Workshop to four. The cultural, educational, and aesthetic-creative clusters were made cognitive recreation. The categories that resulted were physical recreation, social recreation, cognitive recreation, and environment-related recreation. Each included outdoor and indoor recreational activities. Physical recreation required "... exertion or physical endeavor as the major experience of the activity" (Christiansen, 1974, p. 12). Examples of physical recreation were: juvenile low organized games and free play, high organized turf and court games, specialized

individual and dual sports, turf field sports for outdoor recreation, juvenile through adult games and sports, and organized competitive team sports. Social recreation involved ". . . interpersonal relations and social exchanges as the major experience of the activity" (Christiansen, 1974, p. 12) and included participant and spectator involvement. Cognitive recreation included ". . . the cultural, educational, and creative-aesthetic activities which are mentally rewarding" (Christiansen, 1974, p. 12). No examples of cognitive recreation were given. Environment-related recreation was defined as the ". . . use of natural resources such as water, trees, and climate conditions to provide activity opportunity" (Christiansen, 1974, p. 12). Examples were: water activities, winter activities, environment perception, unstructured quiet activities, outing sports and activities, and outdoor education.

Activity clusters seem superior over activity categories and activity descriptors for controlling the overlap and the scope of recreational activities. Activity clusters essentially described the content and process involved in the activity. An economical choice of clusters for classifying recreational activities are physical, social, cognitive and environment-related recreation.

Setting. A review of the literature indicated that activities could also be classified according to with whom a person participated and where the activity occurred. Avedon (1974) used various types of individual and group participation in his instrument to ascertain leisure patterns. Bollman, Moxley and Elliot (1975) asked if various activities were engaged in with relatives, friends or neighbors. Van der Smitten (1972) listed individual, small group, and large group experiences. Based upon these sources, activities with oneself, family, relatives, friends, and/or others were estab-

lished as critical. These can be simplified into two categories: (1) activities by oneself or with family, and (2) activities with friends or others. By oneself or family can be defined as any recreational activity performed by the child alone, with the family, or with relatives. With friends or others can be defined as any recreational activity performed by the child other than when alone or with the immediate family or other relatives.

Bollman, Moxley and Elliot (1975) were also concerned with where activities were performed and examined activities that essentially took place at home, in the neighborhood, and in the community. A more frugal use of these three settings can be obtained by putting the home and neighborhood together and contrast it to the community. Home and neighborhood activities can be defined as any recreational activity in which a child engaged either at home or in the immediately surrounding area (e.g. within reasonable walking distance) of the home. A community recreational activity can be defined as any recreational activity in which a child engaged outside the home or neighborhood. A child playing in a community playground next to his home would be considered playing in his neighborhood. Another child, using the same playground, who had to take a bus to get there, would be considered playing in the community.

If with whom a person participated in an activity and where they participated in the activity are considered together, any recreational activity can potentially be considered four different ways. A summary of these ways appears in Figure 1.

With Whom

Where

Self or Family Home or Neighborhood	Friends or Others Home or Neighborhood
Self or Family Community	Friends or Others Community

Figure 1

Grouping of Recreational Activities -
With Whom and Where

A Two Dimensional Matrix. Three ways recreational activities have been classified were activity categories, activity descriptors, and activity clusters. Activity clusters, which were selected as the best way to classify activities, were viewed in terms of content and process. Specific clusters selected were physical, social, cognitive, and environment-related recreation. Activities can also be classified in terms of their structural components which specify with whom the activity took place and where the activity took place. Thus recreational activities can parsimoniously be viewed as a two dimensional matrix with 16 different cells: content and process activity clusters by structural components with whom and where (See figure 2).

	By Self or Family		With Friends or Others	
	Home or Neighborhood	Community	Home or Neighborhood	Community
Physical	(1)	(2)	(3)	(4)
Social	(5)	(6)	(7)	(8)
Cognitive	(9)	(10)	(11)	(12)
Environment-Related	(13)	(14)	(15)	(16)

Figure 2

Classification of Activities by Structural Components With Whom (Self or Family, Friends or Others) and Where (Home or Neighborhood, Community) by Recreational Activity Clusters (Physical, Social, Cognitive, Environment-Related)

Selection of Activities

The uniqueness of each investigation of recreational patterns is essential to recognize. The selection of recreational activities prior to data collection must be in keeping with the purpose of the study and must be representative of the geographical area studied. This can be accomplished by first looking at facilities and organizations involved with recreation in a particular area (Lundberg, Komarovsky and McInerny, 1969). For example, community recreation directories and United Fund organizations can be used to obtain a general perspective of recreational interests. Some activities from these sources might need to be inferred from the title of groups. If, for example, Beagle Club is the name of a community organization it could be considered as the recreational activity, caring for pets. In addition, parents and children from the area might be asked, "What does your child (you) do for fun?"

It is important to recognize the influence of variables, especially age, sex and socioeconomic status on recreational participation. Age, to a large extent, determines growth and development patterns. Biological and social differences can be found among sexes. Socioeconomic differences, whose single best determiner is the occupation of the head of the household, are apparent in infancy and continue to be a factor throughout life influencing a person's recreation. If the purpose of study was to investigate the recreational patterns of middle SES elementary age males, then activities appropriate to this group should be drawn from the sources previously mentioned.

Recreation activities selected must also be representative of many broad domains. In the past there has been a limited sampling of recreational domains. Probably the best example of the limited sampling of

recreational domains is the emphasis that has been placed on the formal community recreation of the mentally retarded. Informal recreation has largely been ignored despite some evidence that indicates the mentally retarded engage in informal recreation more frequently than in formal community recreation (Fuchigami, 1964; Heimark and McKinnon, 1971; Katz and Yekutieli, 1974; Stanfield, 1973). Researchers have also failed to discriminate indoor, outdoor, expensive, inexpensive, accessible and inaccessible recreation. Consequently, care must also be taken to assure appropriate sampling in terms of these important aspects. An investigator might consider formal recreation that which occurs at a specific time and place in the presence of a paid or volunteer adult supervisor(s) who was not a friend or a relative. Indoor recreation takes place in the interior of a facility. Expensive recreation costs more than one dollar. Accessible recreation is void of all architectural, participation, knowledge, attitudinal, and transportation barriers.

Reliability

Reliability is another important consideration when investigating recreational activity patterns. Measurement errors can be kept to a minimum and hence increase the repeatability of a study if appropriate methods of data collection are used. Methods involved eliciting participation information and scaling the frequency of participation in recreational activities appropriately. Reliability is also increased when high interrater agreement on the classification of activities is generated.

Methods of Data Collection

Eliciting Participation Information. Neulinger (1974) reported that the most widely used method of collecting data on recreational patterns was through an individual's own self-report. This has been done by having

the person either keep a detailed diary or a checklist of activities engaged in over a given period of time. Weaknesses inherent in the diary method or the check method were: securing the cooperation of the person who gave the information, relying on the respondent's memory and perception, and describing activities that meant the same to everyone. There was also a weakness limiting the time in which the data was collected, because not everyone repeated their involvement in an activity during a devised interval (Ditton, 1975).

Rainbow (1971) endorsed the interview checklist or the interest inventory over expressed interests or free responses. He contended that the checklist was better for determining the recreation interests of certain groups. Rainbow asked his subjects to assort 73 activity cards into three piles. It did not matter whether or not they took part in an activity, just their interest or disinterest. They chose five activities that they liked, five that they were indifferent to, and five that they disliked. After all subjects completed this task, a panel of judges were asked to categorize the activities selected by the subjects using a judges' rating scale.

Black (1975) developed a picture Q-sort instrument to measure activity preference of institutionalized retardates. It contained pictures of 50 selected activities, and the subjects were asked to select their top ten preferences. Black felt that the instrument did assess activity preference, but he did not study the reliability of the instrument.

After studying 30 randomly selected college students from a pool of 438, Bishop, Jeanrenard and Lawson (1975) concluded that method selection was dependent upon the purpose for gathering the data. Time diaries, although widely advocated, seemed unnecessary if the purpose

of the study was to gather activity participation summary information. Rather, a recall questionnaire would yield similar information, especially when frequency of activity participation was sought.

The diary method, the picture sort method, the interview checklist or interest inventory, and the recall questionnaire have all been used to elicit information regarding participation in recreational activities. The recall questionnaire seems to be the simplest and best of the four methods for studying participation in recreational activities.

Scaling the Frequency of Participation. McKechnie's (1974) method of data collection for his Leisure Activities Blank, was to ask subjects the extent to which they participated in 121 leisure activities in the past, and how much they expected to take part in these activities in the future. Frequency of participation was ranked on a four point scale: (1) never engaged, (2) tried it once or a few times (occasionally), (3) did it regularly, and (4) currently engaged in it regularly. Blank spaces were provided to write in any activity not included in the instrument.

Rather than being concerned with past, present, and future participation in recreational activities, investigators of activity participation might better determine simply whether a person took part in an activity or not. Then the frequency can be found. A value of 0 can be assigned to an activity in which a child did not participate, a value of 1 can be assigned to an activity in which a child took part in once or twice, a value 2 to an activity in which a child participated in a few or more times, and a value of 3 to an activity in which a child took part in regularly, season permitting. Scaling of this type generates internal consistency for data presumed to be of equal intervals.

Interrater Agreement. A two dimensional matrix containing 16 different cells has been suggested as a valid way of sampling the domain of recreational activities. It was also pointed out that sampling should consider the uniqueness of a study (purpose, geographical location, age, sex and SES) as well as formality, cost, accessibility and locality of activities. Any form used to assess recreational patterns should generate high interrater reliability on the classification of particular activities into specific cells. The percent of agreement method can be used where percent of agreement is equal to the sum of agreements divided by sum of agreements plus the number of disagreements. Interrater reliability should be applied to find those activities that most appropriately represent the 16 cells. The uniqueness of the study especially age appropriate and sex appropriate activities, as well as formal and informal, indoor and outdoor, expensive and inexpensive, accessible and inaccessible activities should also be considered. This can be accomplished by assembling a group of people who are unfamiliar with the purpose of the study, giving them various definitions and asking them to independently select activities that they feel best fit the definition given. For example, they could indicate which activities they feel are expensive (costs more than one dollar) or inexpensive (costs less than one dollar), or which activities are appropriate for elementary age children. Those activities that are generally agreed to fit a particular definition would be used.

Summary

The purpose of this paper was to present a valid and reliable way of assessing recreational patterns. It is hoped that this approach will minimize the effect of weak instrumentation that has been indicative

of past recreational studies. Recreational activities have been classified by four activity clusters, and four structural components indicating with whom and where the activity occurred. Physical, social, cognitive and environment-related clusters were selected. Self or family and friends or others represented the structural component with whom, and home or neighborhood and community represented the structural component where. Ways to correctly select recreational activities from many recreational domains were advanced. This involved the uniqueness of the study and included purpose, location, age, sex and SES of those being investigated. It also included eight recreational domains involving the formality, cost, accessibility, and locality of activities. Generally accepted methods of data collection, namely the recall questionnaire and a four point frequency scale, denoting the extent of recreational participation, was employed.

REFERENCES

- Avedon, E. M. Therapeutic recreation service - an applied behavioral science approach. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1974.
- Avedon, E. M. and Arje, F.B. Socio-recreative programing for the mentally retarded - a handbook for sponsoring groups. New York: Columbia University, 1964.
- Berryman, D. L. Personal Communication, September 22, 1975b.
- Bishop, D., Jeanrenaud, C., and Lawson, K. Comparison of a time diary and recall questionnaire for surveying leisure activities. Journal of Leisure Research, 1975, 7, 73-80.
- Black, J. C. The effects of an adapted physical education program on activity performances of institutionalized mentally retarded children. In H. M. Lundegren (Ed.), Physical education and recreation for the mentally retarded. University Park, Pennsylvania: Penn State HPER Series No 7, 1975.
- Bollman, S. R., Moxley, V. M., and Elliot, N. C. Family and community activities of rural nonfarm families with children. Journal of Leisure Research, 1975, 7, 53-62.
- Brace, D. K. Physical education and recreation for mentally retarded pupils in public schools. Washington, D.C.: American Association for Health, Physical Education and Recreation, 1966.
- Burdge, R. J. Levels of occupational prestige and leisure activity. Journal of Leisure Research, 1969, 1, 262-274.
- Chapman, F. M. Leisure and special community populations. Therapeutic Recreation Journal, 1975, 9 (1), 11-17.
- Christiansen, M. L. The application of a recreation-experience components concept for comprehensive recreation planning. (Project 500M) Commonwealth of Pennsylvania, Bureau of Recreation & Conservation, April, 1974.
- Council for Exceptional Children and American Association for Health, Physical Education and Recreation. Recreation and physical activity for the mentally retarded. Washington, D.C.: American Association for Health, Physical Education and Recreation, 1966.
- Dauer, V. P. Dynamic physical education for elementary school children (4th ed.). Minneapolis: Burgess Publishing Co., 1971.
- Ditton, R. B. Clustering recreation participation data to identify recreation types. In B. van der Smitten (Ed.), Indicators of change in the recreation environment - a national research symposium. University Park, Pennsylvania: Penn State HPER Series No. C, 1975.

Fuchigami, R. Y. An investigation of the extent of integration of some related factors affecting the social relationship of educable mentally handicapped children in Illinois. Unpublished doctoral dissertation, University of Illinois, 1964 (Abstract).

A guide for programs in recreation and physical education for the mentally retarded. Washington, D.C.: American Association for Health, Physical Education and Recreation, 1968.

Heimark, R. and McKinnon, R. Leisure preferences of mentally retarded graduates of a residential training program. Therapeutic Recreation Journal, 1971, 5 (2), 67-68; 93.

Katz, S. and Yekutieli, E. Leisure time problems of mentally retarded graduates of training programs. Mental Retardation, 1974, 12 (3), 54-57.

Kraus, R. Recreation today: program planning and leadership. New York: Appleton-Century-Crofts, 1966.

Lundberg, G. A., Komarovsky, M. and McInerney, M. A. Leisure: a suburban study. New York: Agathon Press, Inc., 1969.

McKechnie, G. E. The psychological structure of leisure: past behavior. Journal of Leisure Research, 1974, 6, 27-45.

Neulinger, J. The psychology of leisure - research approaches to the study of leisure. Springfield, Illinois: Charles C. Thomas, 1974.

Rainbow, D. C. Selected characteristics of leisure interests of educable mentally retarded and normal boys (doctoral dissertation, University of Minnesota, 1971). Dissertation Abstracts International, (University Microfilms No. 72-5570).

The recreation program. Chicago: The Athletic Institute, 1963.

Staley, E. J. (Project Coordinator). A profile of recreation and youth services in the Pasadena foothill area. Los Angeles: Recreation and Youth Services Planning Council, 1969.

Stanfield, J. S. Graduation: what happens to the retarded child when he grows up? Exceptional Children, 1973, 39 (7), 548-552.

Van der Smitten, B. (Ed.). Commonwealth of Pennsylvania, state comprehensive recreation plan, local government aspects, Volume VI, assessment of needs - A: status of areas and facilities, B: a planning process, C: a needs index. The Pennsylvania State University, Recreation and Parks Program, 1970.

Van der Smitten, B. Evaluation and self-study of public recreation and park agencies - a guide with standards and evaluative criteria. Arlington, Virginia: National Recreation and Park Association, 1972.